

ABSTRACT OF THE DISCLOSURE

A method of joining two silicon members, the adhesive used for the method, and the joined product, especially a silicon tower for supporting multiple silicon wafers. A flowable adhesive is prepared comprising silicon particles of size less than 100 μ m and preferably less than 100nm and a silica bridging agent, such as a spin-on glass. Nano-silicon crystallites of about 20nm size may be formed by CVD. Larger particles may be milled from virgin polysilicon. If necessary, a retardant such as a heavy, preferably water-insoluble alcohol such as terpineol is added to slow setting of the adhesive at room temperature. The mixture is applied to the joining areas. The silicon parts are assembled and annealed at a temperature sufficient to link the silica, preferably at 900°C to 1100°C for nano-silicon but higher for milled silicon.